

6.0 NATURAL ENVIRONMENT OVERVIEW

An environmental overview was conducted by Third Rock Consultants, LLC to determine the characteristics of the natural environment in the study area. Resources addressed in this section include: aquatic resources, threatened, rare, and endangered species, air quality, traffic noise, and floodplains. Below is a summary of key points from the overview. **Figure 12** shows the natural environment features in the study area. Refer to **Appendix C** for the entire document.

6.1 Aquatic Resources

The Kentucky River and its tributaries run through the middle of the study area. The tributaries include Tate Creek, South Elkhorn Creek, Silver Creek, Jessamine Creek, Boone Creek, Hickman Creek, Paint Lick Creek and Hines Creek. Hines Creek has been designated as an exceptional water and reference reach by the Kentucky Division of Water. The Kentucky River Palisades, which are a unique formation of steep gorges where many nature preserves have been established, also run through the study area.

Natural wetlands occur in the study area, including two large reservoirs and many small farm ponds. Most of the potential naturally occurring wetlands are along South Elkhorn Creek, Silver Creek and Paint Lick Creek.

Any new stream crossings or changes to existing stream crossings may require United States Army Corps of Engineers Section 404 and Kentucky Division of Water Section 401 permits. Impacts to streams or wetlands may need to be mitigated. Also, the study area lies within an active karst area where water quality and endangered species habitat will need to be taken into consideration.

6.2 Threatened, Rare, and Endangered Species

Threatened, rare, and endangered species in the study area include the Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*), running buffalo clover (*Trifolium stoloniferum*), and the American burying beetle (*Nicrophorus americanus*).

Two nature preserves are also located in the study area, the Raven Run Nature Sanctuary and the Floracliff State Nature Preserve.

6.3 Air Quality

The study area is part of the Bluegrass Interstate Air Quality Control Region. All counties within the study area are currently designated in attainment for all transportation related air pollutants. If any portion of the roadway passes through Fayette County, the PM_{2.5} National Ambient Air Quality Standard should be considered.

6.4 Traffic Noise

Potential sensitive noise receptors in the study area include the Raven Run and Floracliff State Nature Preserve, and the White Hall and Boone Station State Historic Sites. There are also numerous churches, schools, and cemeteries in the study area. However most are concentrated around the cities of Wilmore, Nicholasville, Richmond and southern Lexington / Fayette County.

6.5 Floodplains

Floodplains in the study area occur along existing rivers and creeks, including the Kentucky River, Jessamine Creek, Hickman Creek, Silver Creek, Tate Creek and Boone Creek. The floodplains generally do not extend outside of the river and creek beds.

Figure 12: Natural Environmental Features

